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The Place of Hand Drawing and Computer Aided Design in Interior Design Education

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Abstract

People have to live indoors. Whilst designing the livable interiors, providing suitable functions for these places is gaining importance. In order to design interiors which can give good service, it is necessary to have well-educated interior architects. At this point, the importance of education is an undeniable fact. One of the most important developments, especially in recent years, was the introduction of computers in the design process and the emergence of the concept of computer aided design. This study focuses on the process of finding a solution composed of three-dimensional sketches and modelling. It involved the students who had completed 2 years of education and had started only the 3rd class. The solution phase analyzes the methods used for two-dimensional hand drawing and computer drawing compared with and three-dimensional narrative.

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1. Introduction

In the history of mankind, architecture is considered to be the oldest profession because it is about the production of all kinds of designed environment (Nalçakan, 2006). According to Zevi, architecture is the art of creating location. Consequently, it can be said that internal architecture is the art of creating interior space (Açıcı, 2006). An interior architect has to create the most appropriate environment which will meet both the demands and expectations of its user and respond to all his needs. For this reason, theInterior Architectural profession's training of carries great importance. Generally, Interior Architecture education was developedon almost similar training programmes. The

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common ground, of this education process, is to train professionals who can respond to the needs of time; expose new perspectives; and who are innovative, well-equipped and possess a critical vision.

2. Current Interior Architecture and Its Training

The information, which forms the basis of the social structure, began to change, in the 21st century, by positioning human beings as a central value. "Time",which comes to the fore with life, brings important facts along with itself at the level of both technology and business. Fast-flowing time, about business and life, makes it compulsory that the people focus especiallyontheir work andexpertise. In conclusion, the change, of the society's living conditions, with the expansion of the consuming concept, in people's social lives and at global level, the interior architecture profession became one of the most talked and evolving profession in the 21st century (Kaptan, 2011). It increased the application technique and methods; and, because of thealmost countless number of colour and texture options, increased the diversity of the materials. In viewof being a profession which comes only from inside people's lives, it carries a value which increases day by day.

Interior architecture is a branch, of the profession, based on the design which uses scientific and technical data to create the most suitable and comfortable environment. This is achieved by meeting the user's or the customer's aesthetic creative identity expectations or the customer besides responding to their functional needs (Gökhan, Atasoy, 2005). Interior architecture regulates all kinds of open or closed spaces and their functions are appropriate to the usage. In accordance with the organization of space, it contributes aesthetic values to living spaces by producing appropriate solutions with furniture design and aesthetic elements. It covers a large area such as the interior arrangement of an existing building; historical site; social structures etc; and designs the products such as site; logo; and emblem which, due to the person's or institutions' brand identity,gives a message (Aytis, 2011). The training process aims, throughtheoretical expressions and project work, to provide the students with original designskills for these requirements.

Interior architecture training aims to create individuals who can think in a sophisticated way; interpret the environment through an accumulation ofaesthetic sensitivity;and design functional and environmentally friendly products whose expression power is at advanced level (Kaptan, 1997).

Training the individuals, who can respond to all these requirements in a professional sense, is the duty of the educational institutions. Nowadays in Turkey, interior architecture training is an educational system in which the theory and practice are used together intensively. Education and training consist of architectural design; architecture / art history; visual perception; aesthetics; interior organization; material and technology; construction; restoration; and computer-aided design content lessons and workshop applications.

The lectures consist of basic drawing techniques,which was the students' common language used most effectively for expressing themselves, have a great importance. Especially in the first years, the intensity of these lectures is much more. It aims to teach the basic drawings such as hand-drawing plan; sections; and vision. On the other hand, one of the most important aims is toteach computer language with the aim of making use of developed computer technology. For this reason, in the Computer-Aided Design topics (CAD), the lectures,in which the students learn how to express homework; research; and designing in a computer language, should be included,also as follows:

3. **Hand Drawing and Computer Aided Design**

As in lots of Turkish Universities, in theInterior Architecture Department of Karadeniz Technical University's(KTU) Faculty of Architecture, the lectures involve different drawing techniques. This study examines the usage process of hand drawing and computer aided drawing tools, within theKTU'sInterior Architecture Department's lesson programme, areexamined.

The first year of education starts with an emphasis on hand drawing course in technical art language and finishes with accurate drawingof professional issues of technical art. In the first year of education the scope of the course includes the presentation and implementation of drawing techniques; the introduction of architectural materials and tools;concept of scale; dimensioning principles;and the applications on drawing techniques which have various

sizes. In Interior Architecture and architectural subjects, the applications of design; object; space drawings (plan; section; shape; and perspective) is made by conventional methods.

With developing technology, the drawing tools, used in the design process, are changing day by day. As an option to traditional drawing tools used from the past to the present day, a computer aided design concept has emerged. InKTU's Interior Architecture Department of, with the courses given since the 2nd class, computer aided design and simulation courses enable the students to learn the computer programs. These courses aim to provide students with the ability to work two-dimensional and three-dimensional computer language programs and, after they form interior architecture designs via computer environment, to give them a presentation with virtual reality narratives.

Especially in recent years, computersbegan to be used an effective tools in the design process. Whilst the students wereemploying them, they could use both methods and show these skills, also, in the practical lessons. At first sight, hand drawing seemed to be easy and quick in narrating a design.On the other hand, in a wide range of designs, it was easier to be aided by a computer. The aspect of computer aided design,which accelerated the study, provided perception from different aspects;found the expression close to the truth; and gave it the chance of being chosen by the student-designer-trainer.

This study focused on the usage of hand drawing and computer drawing and which was important, for the students, in the interior architecture training process.

4. Study

In order to compare the hand-drawn and computer drawing, in theFunda Kurak Açıcı Interior Boundary Elements elective course as a 3rd class lesson in the 2012-2013 Fall Semester of, an application wascarried out. For this application, an essay was given which was considered to be an exam question. The students were expected to create,in a 3x5 meter space, a living space which included sleeping; working; and resting functions. With this aim, there was a need to design a piece of equipment which could providethe opportunity to form sub-space and be used as a boundary element. In designing this, the students aimed to use bothhand drawing and computer drawing methods as.

Table 1 is the final product of the student study that is final product is given in Table 1 as comparedto Figure 1 which is a graphic evaluation of the lecture.

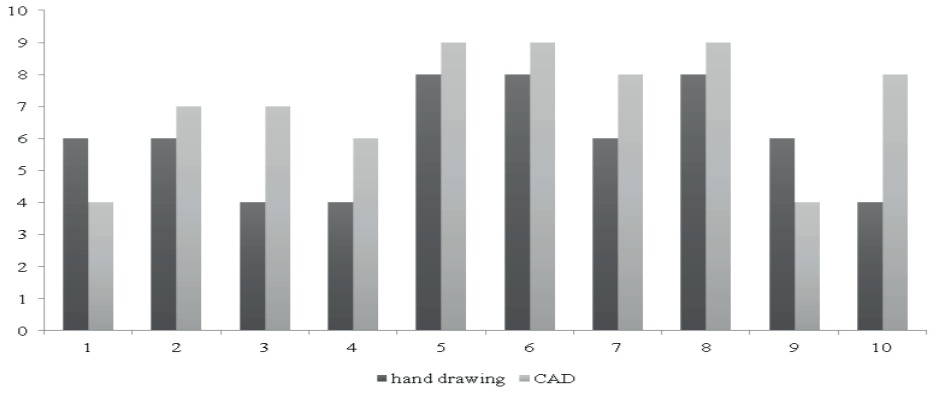
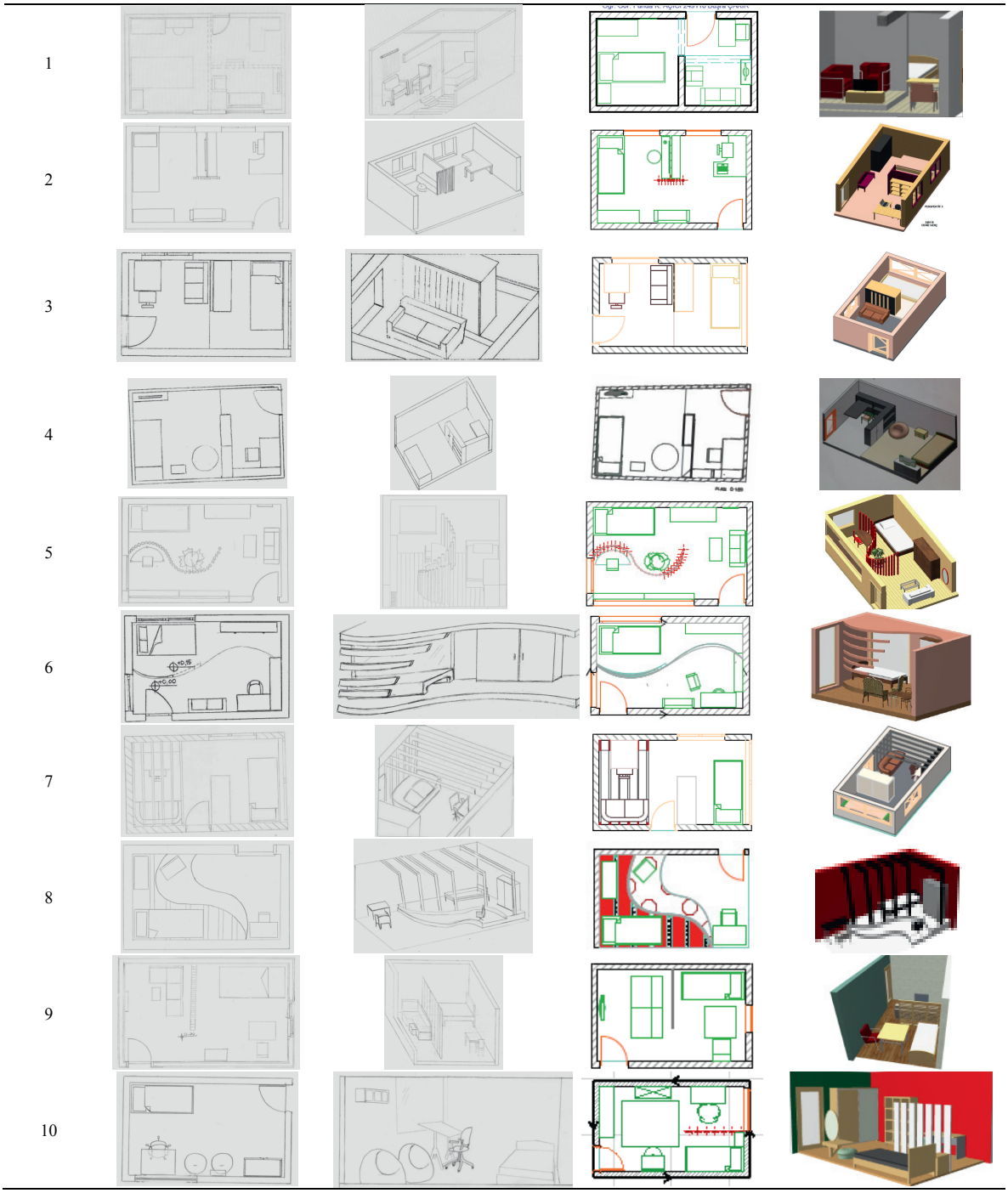


Figure 1: The Evaluations of Hand Drawing and Computer Drawing

Table 1: Student Studies

Study of Students		
Number	**Hand Drawing**	**Computer Aided Design**



5. Results

The interior architects whose duty was to design livable interior spaces, were expected to make designs which brought to the fore creative, original, functional and esthetic valves whilst making a design of space. Interior

architecture students were trying to design space in their education process with a parallel process to professional life; this process evolved in a difficult but enjoyable way.

It was seen that the students, who received Interior Architecture Education, used computer drawing whilst designing. Whilst drawing, they used the following ways:

1. Completing the design by using hand drawing completely.
2. Describing the hand-drawing design at the first level by taking it to computer environment.
3. Completing the design directly onto the computer screen.

Each of the methods described above can be used during and after the training process.

On the basis of interior architecture training, hand-drawing is taught, firstly, in technical drawing courses in a detailed way. The student, who knows technical drawing, developswellhis drawing technique by using computer aided design. In order to increase performance in the design process, it is clear that there should be known first a basic knowledge of hand drawing and, then, it should be completed by forming a model in the computer environment.

In order to better understand the design of interior space, perspective is the most effective way. At first, perspective can be drawn by hand with an easy explanation. However,with hand drawing, it is impossible to narrate a detailed perspective of the space's natural view. At this point, with the modelling made in the computer environment, both fast and practical and regular and scaled space narratives can be provided.

As mentioned here, in the situations where hand drawing was not enough, there wasa need for computer drawing and the deficiencies were overcome in this way.

In the students' study, it was seen that,at the first level, they made the drawing in an easy way and,at the second level, completed their design with computer drawing.

When the positive and negative aspects of hand drawing and computer drawing were inspected, it was seen that,at the beginning and at the sketch level, hand drawing advanced the design positively but, at the advanced level, the design cannot be narrated by hand drawing in a positive way and, for this reason, its negative aspects came out. As for computer drawing, very few students used it from the beginning of the design, and it was seen that it is was used generally at the advanced level of design or when it was finished. The positive aspects, of computer drawing,were seen to be an elaborative, dimensional, and planned model which could be made practically and would save time.

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